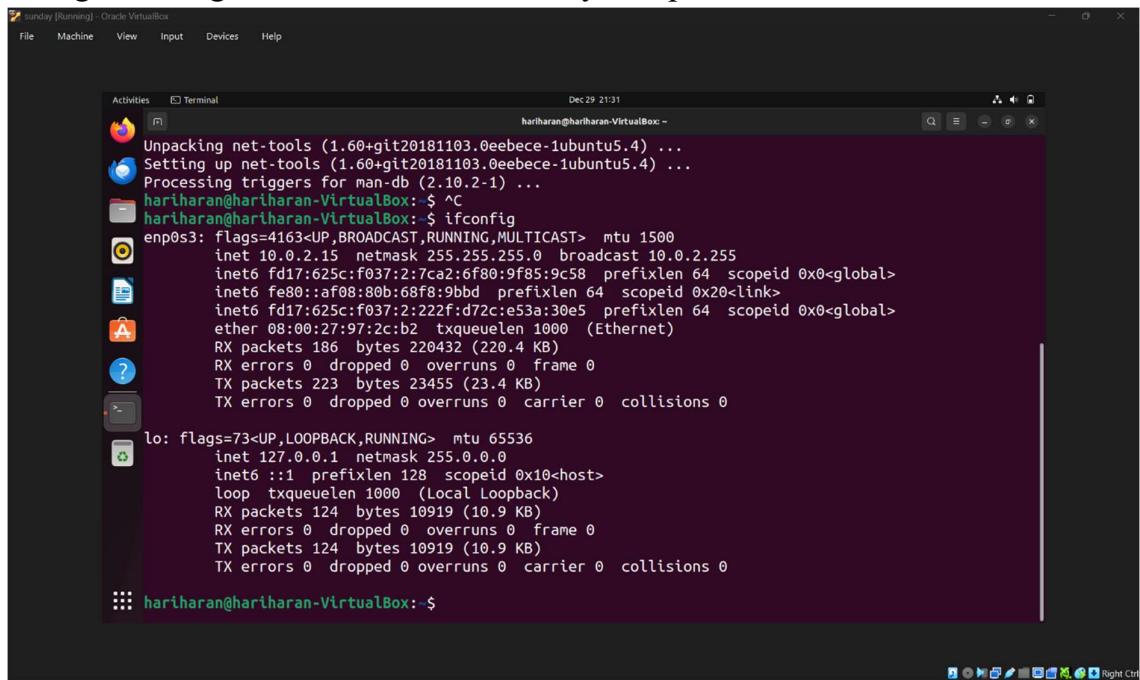


NETWORKING COMMANDS, DISK MANAGEMENT COMMANDS , FILE HIERARCHY STRUCTURE , ADD THE USER IN GROUP USING THE USERMOD

- Using “ifconfig” command use to identify the ip address.

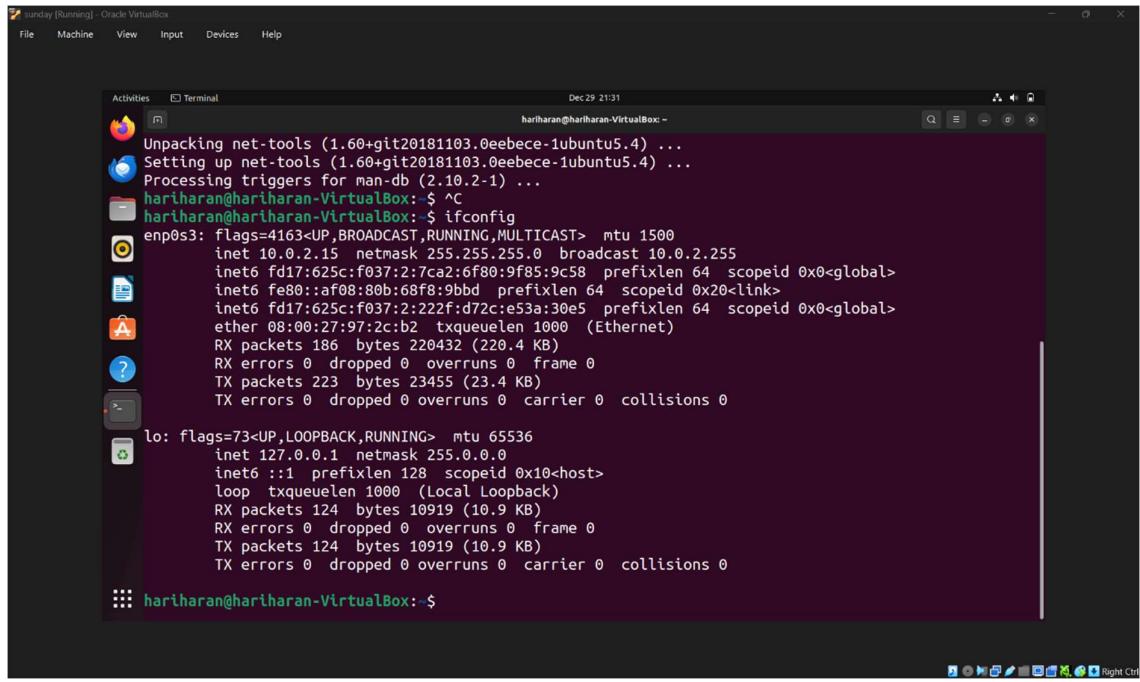


The screenshot shows a terminal window titled "sunday [Running] - Oracle VirtualBox" with the command "ifconfig" running. The terminal output displays network interface configurations:

```
Unpacking net-tools (1.60+git20181103.0eebece-1ubuntu5.4) ...
Setting up net-tools (1.60+git20181103.0eebece-1ubuntu5.4) ...
Processing triggers for man-db (2.10.2-1) ...
hariharan@hariharan-VirtualBox:~$ ^C
hariharan@hariharan-VirtualBox:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
        inet6 fd17:625c:f037:2:7ca2:6f80:9f85:c58 prefixlen 64 scopeid 0x0<global>
        inet6 fe80::af08:80b:68f8:9bbd prefixlen 64 scopeid 0x20<link>
        ether 08:00:27:97:2c:b2 txqueuelen 1000 (Ethernet)
        RX packets 186 bytes 220432 (220.4 KB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 223 bytes 23455 (23.4 KB)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
        inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
        loop txqueuelen 1000 (Local Loopback)
        RX packets 124 bytes 10919 (10.9 KB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 124 bytes 10919 (10.9 KB)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
hariharan@hariharan-VirtualBox:~$
```

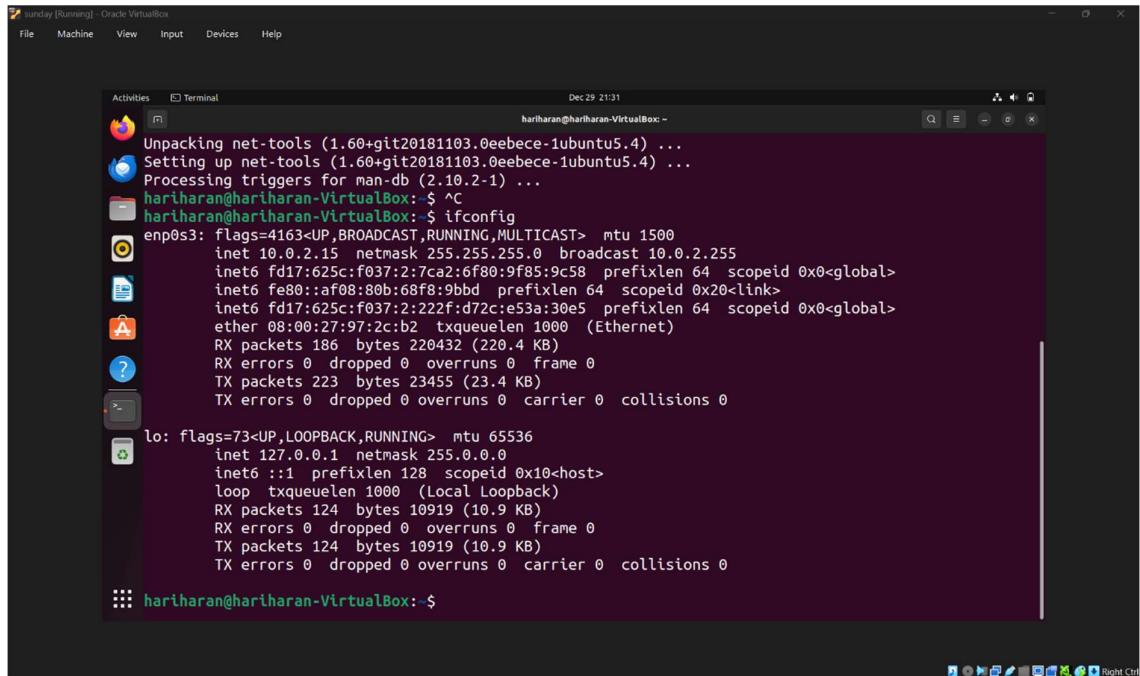
- Using “ping” command use to testing network connectivity.



```
Unpacking net-tools (1.60+git20181103.0eebece-1ubuntu5.4) ...
Setting up net-tools (1.60+git20181103.0eebece-1ubuntu5.4) ...
Processing triggers for man-db (2.10.2-1) ...
hariharan@hariharan-VirtualBox:~$ ^C
hariharan@hariharan-VirtualBox:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.2.15  netmask 255.255.255.0 broadcast 10.0.2.255
          inet6 fd17:625c:f037:2:7ca2:6f80:9f85:9c58  prefixlen 64  scopeid 0x0<global>
            inet6 fe80::af08:80b:68f8:9bbd  prefixlen 64  scopeid 0x20<link>
            ether 08:00:27:97:2c:b2  txqueuelen 1000  (Ethernet)
              RX packets 186  bytes 220432 (220.4 KB)
              RX errors 0  dropped 0  overruns 0  frame 0
              TX packets 223  bytes 23455 (23.4 KB)
              TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
          inet6 ::1  prefixlen 128  scopeid 0x10<host>
            loop  txqueuelen 1000  (Local Loopback)
              RX packets 124  bytes 10919 (10.9 KB)
              RX errors 0  dropped 0  overruns 0  frame 0
              TX packets 124  bytes 10919 (10.9 KB)
              TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0
hariharan@hariharan-VirtualBox:~$
```

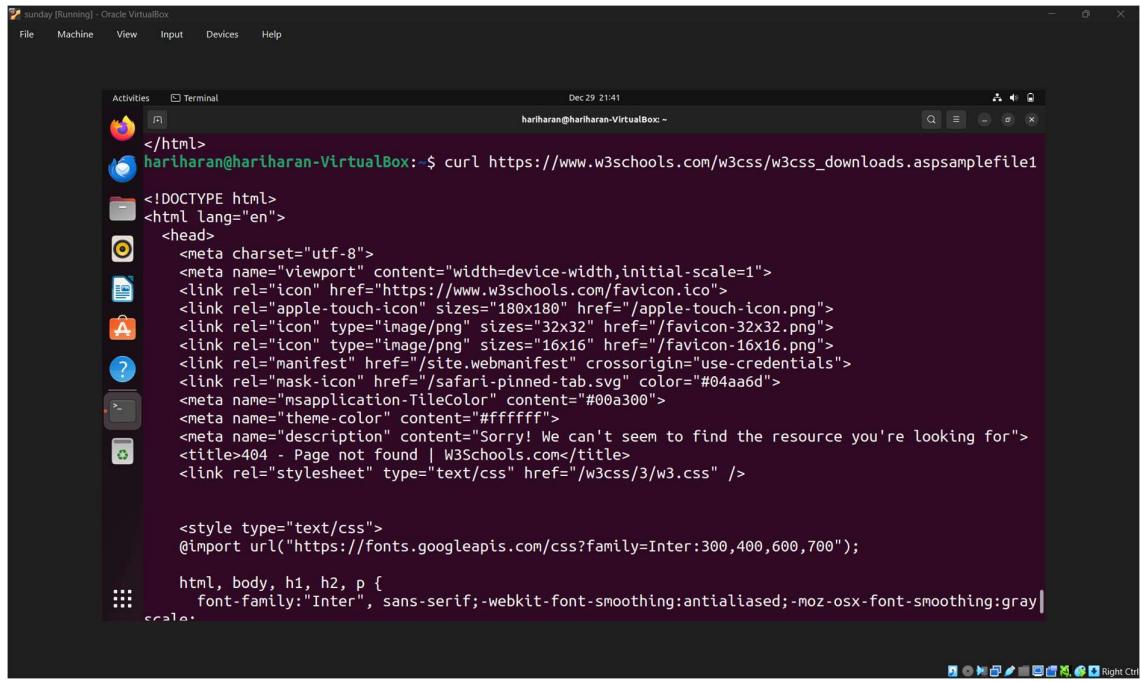
- Using “wget” command to use to test website link of network download.



```
Unpacking net-tools (1.60+git20181103.0eebece-1ubuntu5.4) ...
Setting up net-tools (1.60+git20181103.0eebece-1ubuntu5.4) ...
Processing triggers for man-db (2.10.2-1) ...
hariharan@hariharan-VirtualBox:~$ ^C
hariharan@hariharan-VirtualBox:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.2.15  netmask 255.255.255.0 broadcast 10.0.2.255
          inet6 fd17:625c:f037:2:7ca2:6f80:9f85:9c58  prefixlen 64  scopeid 0x0<global>
            inet6 fe80::af08:80b:68f8:9bbd  prefixlen 64  scopeid 0x20<link>
            ether 08:00:27:97:2c:b2  txqueuelen 1000  (Ethernet)
              RX packets 186  bytes 220432 (220.4 KB)
              RX errors 0  dropped 0  overruns 0  frame 0
              TX packets 223  bytes 23455 (23.4 KB)
              TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
          inet6 ::1  prefixlen 128  scopeid 0x10<host>
            loop  txqueuelen 1000  (Local Loopback)
              RX packets 124  bytes 10919 (10.9 KB)
              RX errors 0  dropped 0  overruns 0  frame 0
              TX packets 124  bytes 10919 (10.9 KB)
              TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0
hariharan@hariharan-VirtualBox:~$
```

- Using “curl” command to use to package of network download.

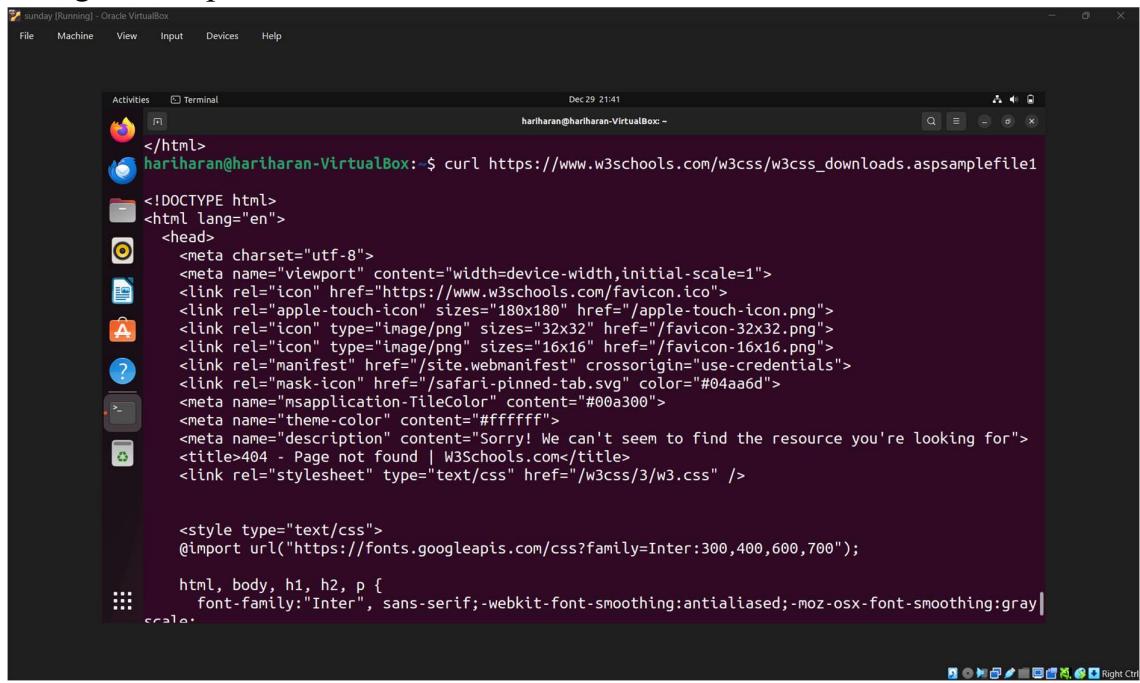


A screenshot of a Linux desktop environment (Ubuntu) showing a terminal window. The terminal window title is "Activities Terminal". The command entered is "curl https://www.w3schools.com/w3css/w3css_downloads.asp?samplefile1". The output of the command is displayed in the terminal, showing the HTML code for a 404 error page from W3Schools.

```
</html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width,initial-scale=1">
<link rel="icon" href="https://www.w3schools.com/favicon.ico">
<link rel="apple-touch-icon" sizes="180x180" href="/apple-touch-icon.png">
<link rel="icon" type="image/png" sizes="32x32" href="/favicon-32x32.png">
<link rel="icon" type="image/png" sizes="16x16" href="/favicon-16x16.png">
<link rel="manifest" href="/site.webmanifest" crossorigin="use-credentials">
<link rel="mask-icon" href="/safari-pinned-tab.svg" color="#04aa6d">
<meta name="msapplication-TileColor" content="#00a300">
<meta name="theme-color" content="#ffffff">
<meta name="description" content="Sorry! We can't seem to find the resource you're looking for">
<title>404 - Page not found | W3Schools.com</title>
<link rel="stylesheet" type="text/css" href="/w3css/3/w3.css" />

<style type="text/css">
@import url("https://fonts.googleapis.com/css?family=Inter:300,400,600,700");
html, body, h1, h2, p {
    font-family:"Inter", sans-serif;-webkit-font-smoothing:antialiased;-moz-osx-font-smoothing:gray|
```

- Using “sudo apt install telnet” to install an telnet.



A screenshot of a Linux desktop environment (Ubuntu) showing a terminal window. The terminal window title is "Activities Terminal". The command entered is "curl https://www.w3schools.com/w3css/w3css_downloads.asp?samplefile1". The output of the command is displayed in the terminal, showing the HTML code for a 404 error page from W3Schools.

```
</html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width,initial-scale=1">
<link rel="icon" href="https://www.w3schools.com/favicon.ico">
<link rel="apple-touch-icon" sizes="180x180" href="/apple-touch-icon.png">
<link rel="icon" type="image/png" sizes="32x32" href="/favicon-32x32.png">
<link rel="icon" type="image/png" sizes="16x16" href="/favicon-16x16.png">
<link rel="manifest" href="/site.webmanifest" crossorigin="use-credentials">
<link rel="mask-icon" href="/safari-pinned-tab.svg" color="#04aa6d">
<meta name="msapplication-TileColor" content="#00a300">
<meta name="theme-color" content="#ffffff">
<meta name="description" content="Sorry! We can't seem to find the resource you're looking for">
<title>404 - Page not found | W3Schools.com</title>
<link rel="stylesheet" type="text/css" href="/w3css/3/w3.css" />

<style type="text/css">
@import url("https://fonts.googleapis.com/css?family=Inter:300,400,600,700");
html, body, h1, h2, p {
    font-family:"Inter", sans-serif;-webkit-font-smoothing:antialiased;-moz-osx-font-smoothing:gray|
```

- Using “lstdblk” command to list block statement.

```

Building dependency tree... Done
Reading state information... Done
telnet is already the newest version (0.17-44build1).
telnet set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 306 not upgraded.
hariharan@hariharan-VirtualBox:~$ telnet 49.206.10.74 22
Trying 49.206.10.74...
telnet: Unable to connect to remote host: Connection refused
hariharan@hariharan-VirtualBox:~$ lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0    7:0    0   4K  1 loop /snap/bare/
loop1    7:1    0 74.3M 1 loop /snap/core22/1612
loop2    7:2    0 271.2M 1 loop /snap/firefox/4848
loop3    7:3    0 505.1M 1 loop /snap/gnome-42-2204/176
loop4    7:4    0 250.8M 1 loop /snap/firefox/7559
loop5    7:5    0  91.7M 1 loop /snap/gtk-common-themes/1535
loop6    7:6    0 12.9M 1 loop /snap/snap-store/1113
loop7    7:7    0 38.8M 1 loop /snap/snapd/21759
loop8    7:8    0 50.9M 1 loop /snap/snapd/25577
loop9    7:9    0  500K 1 loop /snap/snapd-desktop-integration/178
loop10   7:10   0  576K 1 loop /snap/snapd-desktop-integration/315
sda      8:0    0   25G  0 disk 
└─sda1   8:1    0   512M 0 part /boot/efi
└─sda2   8:2    0   24.5G 0 part /
sr0     11:0   1 1024M 0 rom
hariharan@hariharan-VirtualBox:~$
```

- Using “df -h” command to use disk free humanreadable.

```

NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0    7:0    0   4K  1 loop /snap/bare/
loop1    7:1    0 74.3M 1 loop /snap/core22/1612
loop2    7:2    0 271.2M 1 loop /snap/firefox/4848
loop3    7:3    0 505.1M 1 loop /snap/gnome-42-2204/176
loop4    7:4    0 250.8M 1 loop /snap/firefox/7559
loop5    7:5    0  91.7M 1 loop /snap/gtk-common-themes/1535
loop6    7:6    0 12.9M 1 loop /snap/snap-store/1113
loop7    7:7    0 38.8M 1 loop /snap/snapd/21759
loop8    7:8    0 50.9M 1 loop /snap/snapd/25577
loop9    7:9    0  500K 1 loop /snap/snapd-desktop-integration/178
loop10   7:10   0  576K 1 loop /snap/snapd-desktop-integration/315
sda      8:0    0   25G  0 disk 
└─sda1   8:1    0   512M 0 part /boot/efi
└─sda2   8:2    0   24.5G 0 part /
sr0     11:0   1 1024M 0 rom
hariharan@hariharan-VirtualBox:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs          195M   1.5M  194M  1% /run
/dev/sda2       24G   13G   11G  56% /
tmpfs          975M      0  975M  0% /dev/shm
tmpfs          5.0M  4.0K   5.0M  1% /run/lock
efivarsfs      256K   25K   227K  10% /sys/firmware/efi/efivars
/dev/sda1       51M   6.1M   50.5M  2% /boot/efi
tmpfs          195M  100K   195M  1% /run/user/1000
hariharan@hariharan-VirtualBox:~$
```

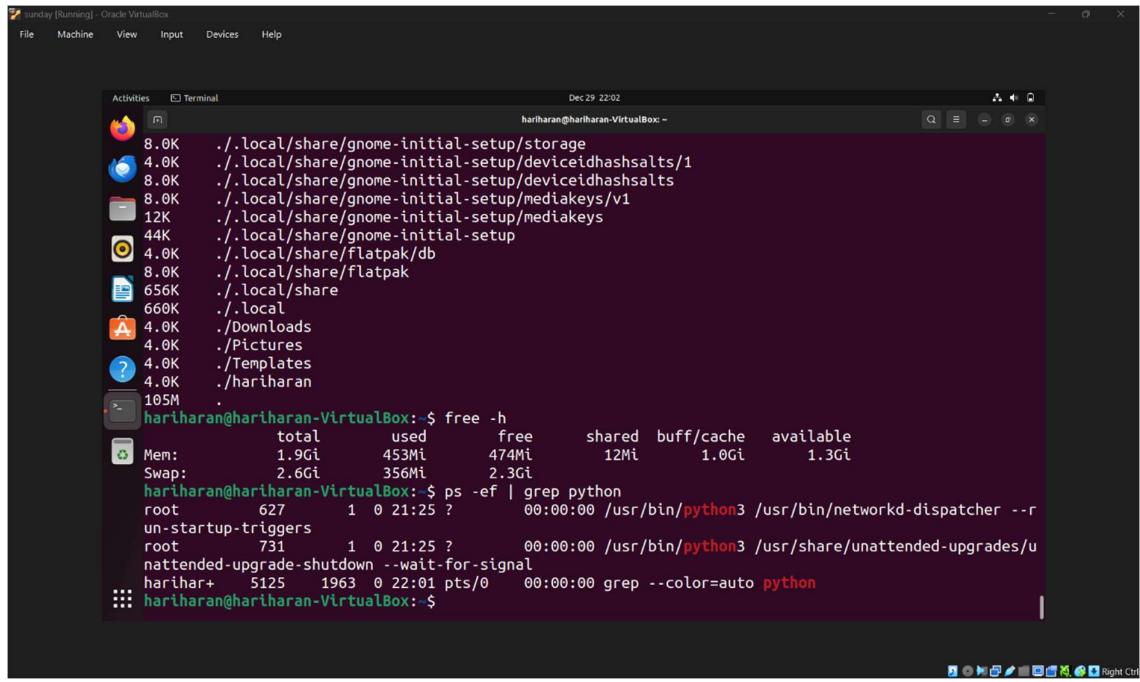
- Using “du -h” command to use disk usage humanreadable.

```
Activities Terminal Dec 29 22:00
hariharan@hariharan-VirtualBox:~$ du -h
efivarfs      256K   25K  227K  10% /sys/firmware/efi/efivars
/dev/sda1      511M  6.1M 505M  2% /boot/efi
tmpfs        195M 100K 195M  1% /run/user/1000
hariharan@hariharan-VirtualBox:~$ du -h
4.0K  ./Music
4.0K  ./Documents
4.0K  ./Videos
84K   ./config/pulse
12K   ./config/ibus/bus
16K   ./config/ibus
4.0K   ./config/nautilus
8.0K   ./config/systemd/user/default.target.wants
12K   ./config/systemd/user
16K   ./config/systemd
12K   ./config/dconf
8.0K   ./config/evolution/sources
12K   ./config/evolution
4.0K   ./config/goa-1.0
4.0K   ./config/update-notifier
8.0K   ./config/gtk-3.0
184K   ./config
4.0K   ./Desktop
4.0K   ./snap/firefox/7559/.config/ibus
8.0K   ./snap/firefox/7559/.config/fontconfig
4.0K   ./snap/firefox/7559/.config/dconf
4.0K   ./snap/firefox/7559/.config/gtk-2.0
4.0K   ./snap/firefox/7559/.config/gtk-3.0
```

- Using “free -h” command to use free humanreadable.

```
Activities Terminal Dec 29 22:01
hariharan@hariharan-VirtualBox:~$ free -h
4.0K  ./local/share/evolution/calendar/trash
8.0K  ./local/share/evolution/calendar/system
16K   ./local/share/evolution/calendar
148K   ./local/share/evolution
12K   ./local/share/keyrings
4.0K   ./local/share/ibus-table
8.0K  ./local/share/gnome-initial-setup/storage
4.0K  ./local/share/gnome-initial-setup/deviceidhashsalts/1
8.0K  ./local/share/gnome-initial-setup/deviceidhashsalts
8.0K  ./local/share/gnome-initial-setup/mediakeys/v1
12K   ./local/share/gnome-initial-setup/mediakeys
44K   ./local/share/gnome-initial-setup
4.0K   ./local/share/flatpak/db
8.0K  ./local/share/flatpak
656K   ./local/share
660K   ./local
4.0K   ./Downloads
4.0K   ./Pictures
4.0K   ./Templates
4.0K   ./hariharan
105M   .
hariharan@hariharan-VirtualBox:~$ free -h
              total        used        free      shared  buff/cache   available
Mem:       1.9Gi      453Mi     474Mi      12Mi      1.0Gi     1.3Gi
Swap:      2.6Gi      356Mi     2.3Gi
```

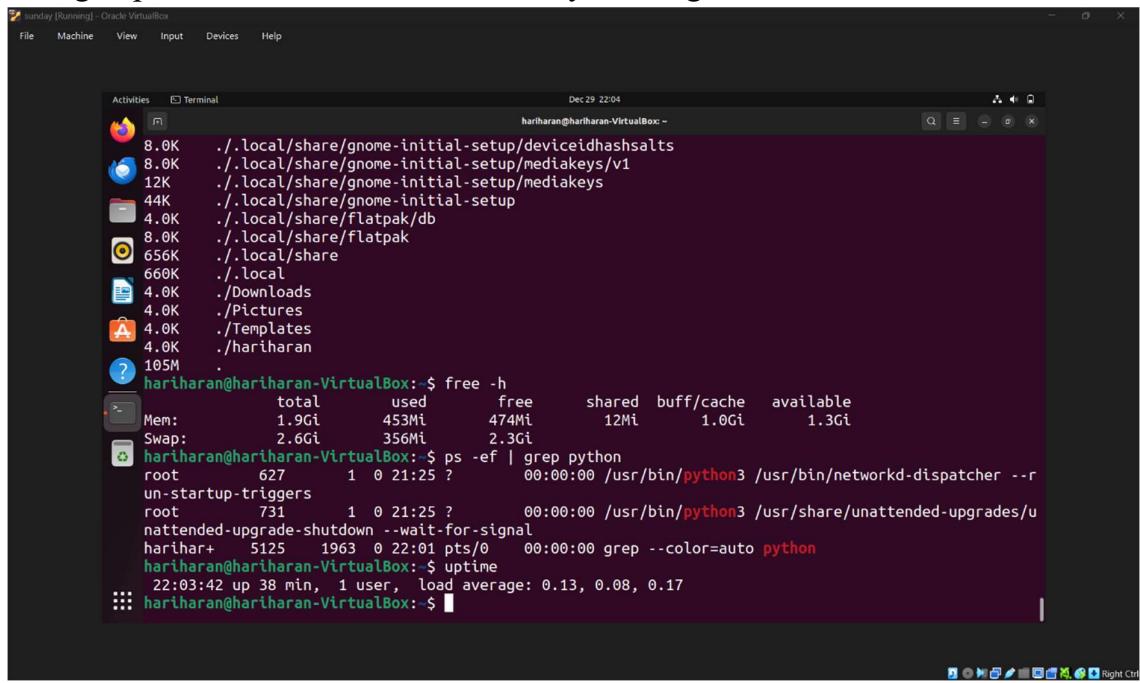
- Using “ps -ef | grep python” command to use process of an python



A screenshot of a Linux desktop environment showing a terminal window. The terminal window title is "Activities Terminal" and the date and time are "Dec 29 22:02". The terminal shows the following command-line session:

```
hariharan@hariharan-VirtualBox:~$ free -h
              total        used        free      shared  buff/cache   available
Mem:       1.9Gi      453Mi     474Mi      12Mi      1.0Gi      1.3Gi
Swap:      2.6Gi      356Mi      2.3Gi
hariharan@hariharan-VirtualBox:~$ ps -ef | grep python
root      627      1  0 21:25 ?      00:00:00 /usr/bin/python3 /usr/bin/networkd-dispatcher --r
un-startup-triggers
root      731      1  0 21:25 ?      00:00:00 /usr/bin/python3 /usr/share/unattended-upgrades/u
nattended-upgrade-shutdown --wait-for-signal
harihar+  5125    1963  0 22:01 pts/0      00:00:00 grep --color=auto python
hariharan@hariharan-VirtualBox:~$
```

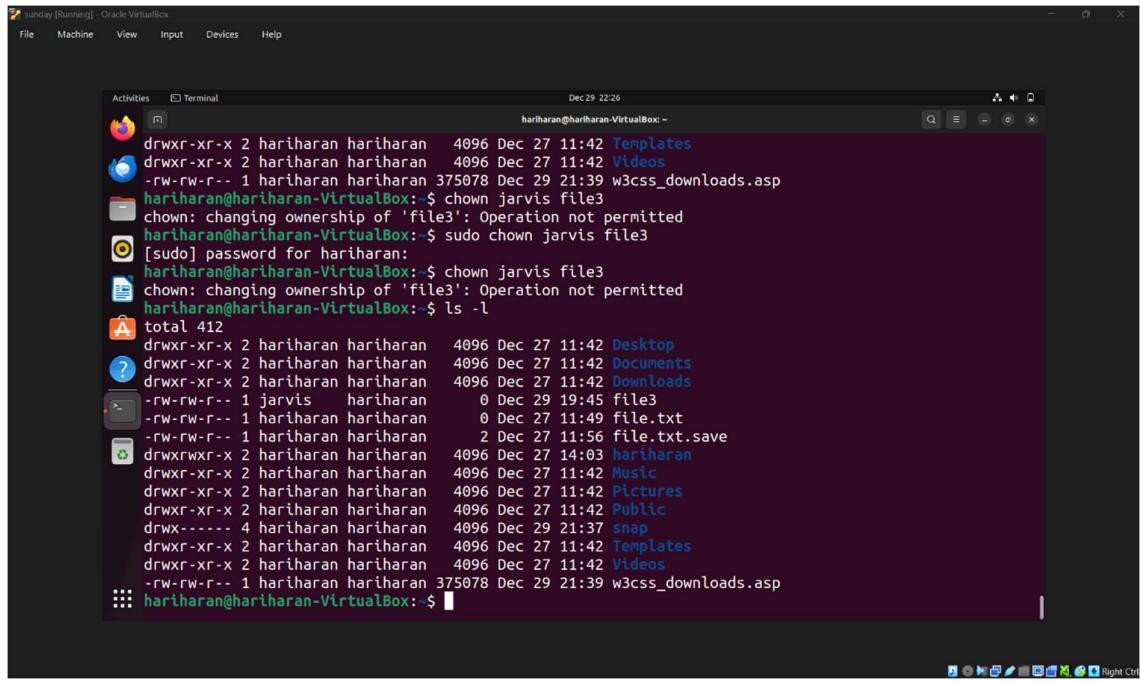
- Using “uptime” command to use identify running time.



A screenshot of a Linux desktop environment showing a terminal window. The terminal window title is "Activities Terminal" and the date and time are "Dec 29 22:04". The terminal shows the following command-line session:

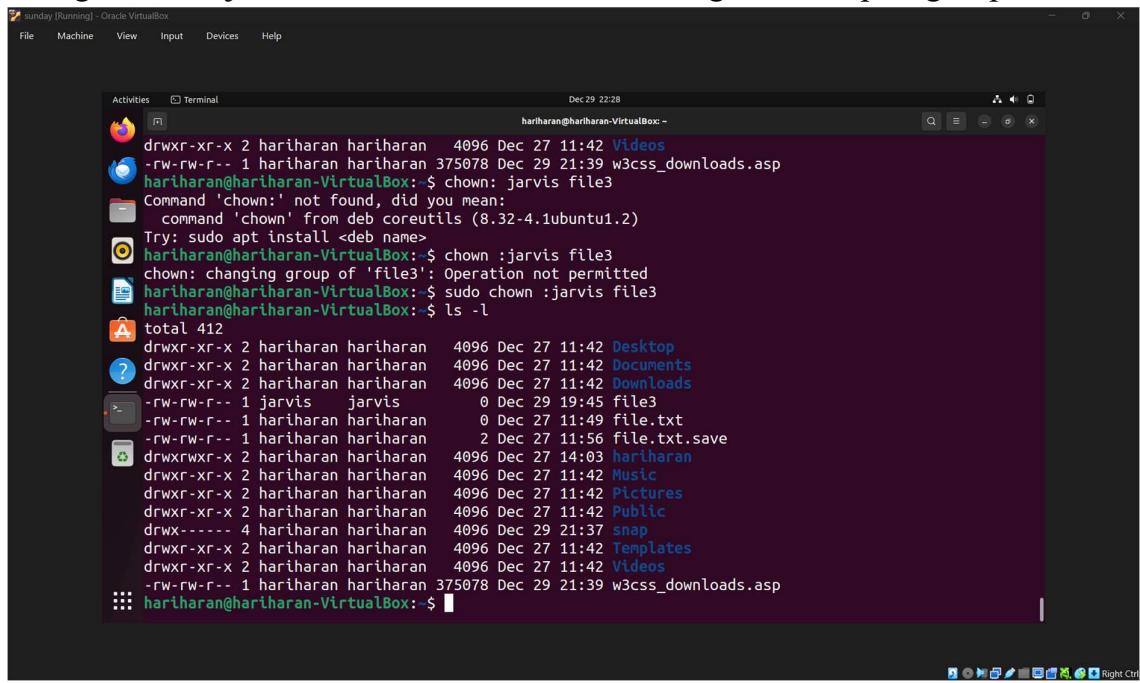
```
hariharan@hariharan-VirtualBox:~$ free -h
              total        used        free      shared  buff/cache   available
Mem:       1.9Gi      453Mi     474Mi      12Mi      1.0Gi      1.3Gi
Swap:      2.6Gi      356Mi      2.3Gi
hariharan@hariharan-VirtualBox:~$ ps -ef | grep python
root      627      1  0 21:25 ?      00:00:00 /usr/bin/python3 /usr/bin/networkd-dispatcher --r
un-startup-triggers
root      731      1  0 21:25 ?      00:00:00 /usr/bin/python3 /usr/share/unattended-upgrades/u
nattended-upgrade-shutdown --wait-for-signal
harihar+  5125    1963  0 22:01 pts/0      00:00:00 grep --color=auto python
hariharan@hariharan-VirtualBox:~$ uptime
 22:03:42 up 38 min,  1 user,  load average: 0.13, 0.08, 0.17
hariharan@hariharan-VirtualBox:~$
```

- Using “chown jarvis file3” command to use change ownership of file.



```
Activities Terminal
File Machine View Input Devices Help
Dec 29 22:26
hariharan@hariharan-VirtualBox: ~
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Templates
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Videos
-rw-rw-r-- 1 hariharan hariharan 375078 Dec 29 21:39 w3css_downloads.asp
hariharan@hariharan-VirtualBox: ~$ chown jarvis file3
chown: changing ownership of 'file3': Operation not permitted
hariharan@hariharan-VirtualBox: ~$ sudo chown jarvis file3
[sudo] password for hariharan:
hariharan@hariharan-VirtualBox: ~$ chown jarvis file3
chown: changing ownership of 'file3': Operation not permitted
hariharan@hariharan-VirtualBox: ~$ ls -l
total 412
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Desktop
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Documents
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Downloads
-rw-rw-r-- 1 jarvis hariharan 0 Dec 29 19:45 file3
-rw-rw-r-- 1 hariharan hariharan 0 Dec 27 11:49 file.txt
-rw-rw-r-- 1 hariharan hariharan 2 Dec 27 11:56 file.txt.save
drwxrwxr-x 2 hariharan hariharan 4096 Dec 27 14:03 hariharan
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Music
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Pictures
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Public
drwx----- 4 hariharan hariharan 4096 Dec 29 21:37 snap
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Templates
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Videos
-rw-rw-r-- 1 hariharan hariharan 375078 Dec 29 21:39 w3css_downloads.asp
hariharan@hariharan-VirtualBox: ~$
```

- Using “chown :jarvis file3” command to use change ownership of group.



```
Activities Terminal
File Machine View Input Devices Help
Dec 29 22:28
hariharan@hariharan-VirtualBox: ~
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Videos
-rw-rw-r-- 1 hariharan hariharan 375078 Dec 29 21:39 w3css_downloads.asp
hariharan@hariharan-VirtualBox: ~$ chown: jarvis file3
Command 'chown:' not found, did you mean:
  command 'chown' from deb coreutils (8.32-4.1ubuntu1.2)
Try: sudo apt install <deb name>
hariharan@hariharan-VirtualBox: ~$ chown :jarvis file3
chown: changing group of 'file3': Operation not permitted
hariharan@hariharan-VirtualBox: ~$ sudo chown :jarvis file3
hariharan@hariharan-VirtualBox: ~$ ls -l
total 412
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Desktop
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Documents
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Downloads
-rw-rw-r-- 1 jarvis hariharan 0 Dec 29 19:45 file3
-rw-rw-r-- 1 hariharan hariharan 0 Dec 27 11:49 file.txt
-rw-rw-r-- 1 hariharan hariharan 2 Dec 27 11:56 file.txt.save
drwxrwxr-x 2 hariharan hariharan 4096 Dec 27 14:03 hariharan
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Music
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Pictures
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Public
drwx----- 4 hariharan hariharan 4096 Dec 29 21:37 snap
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Templates
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Videos
-rw-rw-r-- 1 hariharan hariharan 375078 Dec 29 21:39 w3css_downloads.asp
hariharan@hariharan-VirtualBox: ~$
```

- Using “usermod -aG” command to user add to another group to get permission.

sunday [Running] - Oracle VirtualBox

File Machine View Input Devices Help

Activities Terminal Dec 29 22:32

hariharan@hariharan-VirtualBox:~\$ cat /etc/group | grep jarvis
jarvis:x:1003:
hariharan@hariharan-VirtualBox:~\$ usermod -aG vijay jarvis
usermod: Permission denied.
usermod: cannot lock /etc/passwd; try again later.
hariharan@hariharan-VirtualBox:~\$ sudo usermod -aG vijay jarvis
hariharan@hariharan-VirtualBox:~\$ ls -l
total 412
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Desktop
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Documents
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Downloads
? -rw-rw-r-- 1 jarvis jarvis 0 Dec 29 19:45 file3
-rw-rw-r-- 1 hariharan hariharan 0 Dec 27 11:49 file.txt
-rw-rw-r-- 1 hariharan hariharan 2 Dec 27 11:56 file.txt.save
drwxrwxr-x 2 hariharan hariharan 4096 Dec 27 14:03 hariharan
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Music
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Pictures
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Public
drwx----- 4 hariharan hariharan 4096 Dec 29 21:37 snap
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Templates
drwxr-xr-x 2 hariharan hariharan 4096 Dec 27 11:42 Videos
-rw-rw-r-- 1 hariharan hariharan 375078 Dec 29 21:39 w3css_downloads.asp
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